

Ichthyological Snippets

By GILBERT P. WHITLEY.

(Contribution from The Australian Museum, Sydney.)

(Figures 1-3.)

Family HEMIRAMPHIDAE.

Genus REPORHAMPHUS Whitley, 1931.

REPORHAMPHUS ARDELIO Whitley.

(Figure 1.)

Reporhamphus ardelio Whitley, Austr. Zool. vi, 1931, p. 314. River Garfish of New South Wales, Victoria, and southern Queensland.

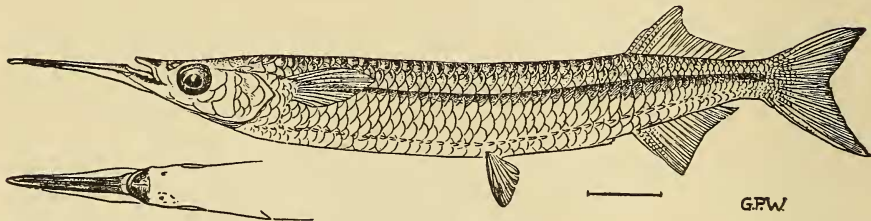


Fig. 1: River Garfish, *Reporhamphus ardelio*. Lectotype.

G. P. Whitley del.

Here figured from the lectotype of the species in the Australian Museum from the Clarence River, New South Wales. It is $11\frac{1}{4}$ inches long and registered No. I.12744.

Family SYNGNATHIDAE.

Genus HISTIOGAMPHELUS McCulloch, 1914.

HISTIOGAMPHELUS MACULATUS ROBENSIS Whitley.

(Figure 2.)

Histiogamphelus maculatus robensis Whitley, Rec. Austr. Mus. xxii, 1948, p. 76. Robe, South Australia.

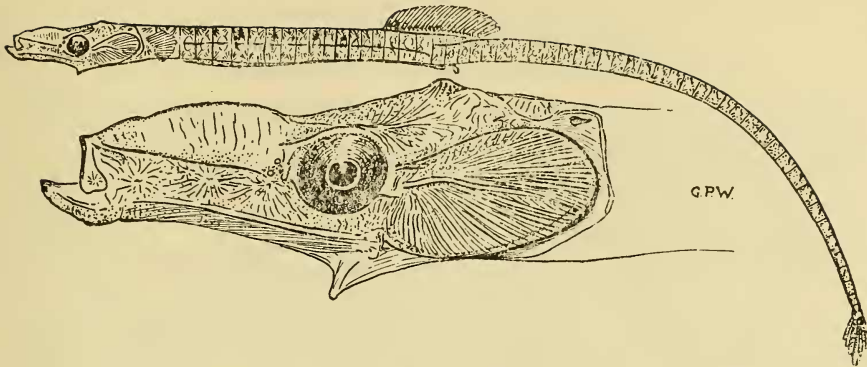


Fig. 2: Pipefish, *Histiogamphelus maculatus robensis*. Holotype.
G. P. Whitley del.

This subspecies is here figured for the first time from the holotype thereof in the South Australian Museum, Adelaide.

Family CENTROPOMIDAE.

Genus HYOPTERUS Gill, 1861.

HYOPTERUS MACROPTERUS (Gunther).

(Figure 3.)

Psammoperca macroptera Gunther, Cat. Fish. Brit. Mus. i, 1859, p. 69. "Victoria," i.e., Port Essington, Northern Territory of Australia. And of Australian lists. *Id.* Boulenger; Cat. Fish. Brit. Mus., ed. 2, 1895, p. 366. *Id.* Woodward, W. Austr. Yearbook 1900-1 (1902), p. 270 (N.W. Australia).

Hypopterus macropterus Gill, Proc. Acad. Nat. Sci. Philad. xiii, March 31, 1861, p. 51. *Id.* Whitley, W. Austr. Fish. Bull. ii, 1948, p. 20.

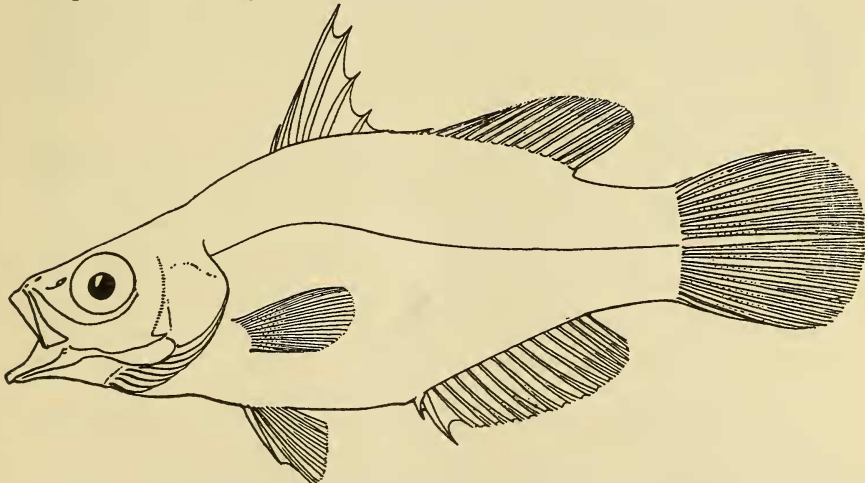


Fig. 3: Spiky Bass, *Hypopterus macropterus*. Holotype.
A. Fraser-Brunner del.

Mr. A. Fraser-Brunner kindly made the accompanying figure from Gunther's holotype in the British Museum for me a number of years ago. This is the first time the species has been illustrated,

Family EPINEPHELIDAE.

Genus EPINEPHELUS Bloch, 1793.

EPINEPHELUS SLACKSMITHI, sp. nov.

D. xi, 15; A. iii, 8; P. 16; L. lat. 60. About 57 transverse rows of scales between head and hypural joint and about 70 rows above l. lat. Tr. 9/1/36 to 6/1/8 on caudal peduncle. Predorsal scales about 25 plus anterior rudiments.

Head (122 mm.) nearly 2.3, depth (98) 2.8 in standard length (280). Eye (24) 5, interorbital and snout (20) 6.1, maxilla (56) 2.2 in head. Depth of maxilla, 15 mm.; length of pectoral, 73; of ventral, 51; of longest (3rd) anal spine, 33; of longest (4th) dorsal spine, 39; of caudal fin, 60; depth of caudal peduncle, 33; suborbital, 9; and width of head, 56 mm.

Head deeper than wide and longer than deep, naked before eyes and on lower surface, otherwise with very small scales. Interorbital concave, scaly, except anteriorly. Posterior margin of preoperculum finely serrated, its inferior border without barbs. Opercular flap very broadly rounded above, with weak spine at its flap; before this and slightly above lies the middle of the three opercular spines which is much nearer to the lower than to the upper opercular spine; the lowest spine is the most anterior. Maxillary truncate, scaleless, with supplemental bone. Tongue rounded, scooplike. Bands of cardiform teeth on jaws, finer ones on vomer (in a V-patch) and palatines; three rows of teeth at sides of mandible, reduced to one row posteriorly; no canines or particularly enlarged teeth. Nostrils oval, close together before eye; anterior with simple skinny fold, posterior open. Pseudobranchiae well developed. Gill-rakers 6/1/15, mostly short, blunt and spiny, the longest one at angle, 8 mm.

Body compressed but robust, deepest at level of gill-flaps. Comparatively large, oblong, ctenoid scales, with about 7 to 11 basal radii, cover most of the body, becoming small anteriorly and hardly trespassing on fins; scale-rows follow body-contours, and the scales are not deeply embedded in the skin. Seven rows of scales between l. lat. and sixth dorsal spine. L. lat. tubes simple.

Dorsal fins slightly notched, soft portion rounded, reaching caudal when adpressed. Base of spinous dorsal fin (95 mm.) much longer than that of soft (62), its fourth spine longest but shorter than longest ray (45). Third anal spine slightly longest; its rays as long as those of dorsal. Pectoral rounded, eighth ray longest; a scaly membrane at dorsal edge of pectoral fin base is connected with body. Ventrals originate under pectoral base. Caudal broadly rounded. No produced fin-rays.

Colour, in formalin, dark chocolate brown; the head and thorax uniform but elsewhere the fish is mostly covered by brownish-cream spots. On the body the spots occur as light centres to the scales and run along the scale-rows. On the unpaired fins the light spots are rounder, more regular, about 3 mm. in diameter, and generally larger than their interspaces, which form a net or lacework pattern. The soft dorsal, caudal and anal are inframarginally very dark brown with narrow cream edges. Paired fins mostly dark brown with small light spots not as distinct as those on the unpaired fins. A dark brown moustache-mark above maxillary; dark lichen-like markings on cheeks and lips.

Described from the holotype, a specimen 280 mm. in standard length or nearly 13½ inches overall. Australian Museum registered No. IB.3871.

Loc.—Heron Island, Capricorn Group, Queensland; Mr. R. Slack-Smith 1957.

A smaller paratype is in the Australian Museum from the Engineer Group, New Guinea, the "*Serranus microdon*" of Macleay (Proc. Linn. Soc. N.S. Wales viii, 1883, p. 253), *non* Bleeker.

The new species, named after its collector, may be distinguished from its congeners by the very convex arc of the upper flap of the operculum, the comparatively large scales, the light spots forming with their interspaces a network on body and fins, and by its fin-counts and number of gill-rakers.

Family PSEUDOCHROMIDAE.

Genus PSEUDOCHROMIS Ruppell, 1835, s.l.

PSEUDOCHROMIS McCULLOCHI PERPULCHER, subsp. nov.

Pseudochromis purpurascens McCulloch, Biol. Res. Endeav. v, 1926, p. 188, pl. xlix (New Hebrides). NOT *Nesiotes purpurascens* De Vis, Proc. Linn. Soc. N.S. Wales viii, 1884, p. 453 from the South Seas, rediscovered and redefined by Herre, Zool. Ser. Field Mus. xxi, 1936, p. 165, fig. 8, but *Nesiotes* being preoccupied, the taxon renamed *Cypho purpurascens* by Myers, Stanf. Ichth. Bull. ii, 1940, p. 35.

Pseudochromis mccullochi Myers, Copeia 1932, i, April 12, 1932, p. 30. New name for *P. purpurascens* McCulloch, non De Vis. Holotype in Australian Museum from Ringdove Bay, Api Island, New Hebrides.

Id. Fowler, Mem. Bern. P. Bish. Mus. xi, 1934, p. 412.

Id. Herre, Zool. Ser. Field Mus. xxi, 353, 1936, p. 167.

Br. 6, D. iii, 23; A. iii, 12; P. 18; V. i, 5; C. 17 et lat. brev. L. lat. 25 + 7 (or 6 on right side). Sc. 30. Tr. 2/1/10. Predorsal Sc. 14 to interorbital.

Head (16 mm.) 3.5, depth (15) 3.7 in standard length (56). Eye (4) equal to snout and greater than interorbital (3). Maxilla, 6 mm.; length of pectoral, 12; of caudal, 13; depth of caudal peduncle, nearly 8.

Maxillary reaching below front of eye. Lower jaw slightly the longer. Four juxtaposed canines in jaws anteriorly, behind them a patch of villiform teeth and on each side a row of small conic teeth becoming taller posteriorly. Fine teeth at back of jaws. A row of conic teeth along side of upper jaw. Teeth on vomer, apparently not on palatines. Tongue acute. Nostrils small, porelike, before eye. Preoperculum without spine, scalloped between pores. Opercles entire, not denticulate. A flat, soft opercular spine. Gill-membranes united across narrow isthmus. Gill-openings wide, rakers slender.

Form compressed, deepest at belly; profiles convex.

Head and body almost entirely scaly but snout, eyes, chin and fins are scaleless except proximal half of caudal fin.

Lateral line tubes running near top of back, one scale-row between it and most of dorsal fin; it is interrupted by three scale-rows before resuming along side of caudal peduncle. Scales thin, mostly ctenoid, transparent; 1. lat. tubes simple.

Fins rounded or with bluntly pointed lobes. Ventrals pointed, situated below pectoral base, not reaching vent. Dorsal originating over pectoral base. No pungent spines. Most rays simple, posterior ones branched; anal similar. Caudal bluntly pointed, shorter than head.

Colour in formalin, mostly white or cream (with a greenish tinge probably due to preservative), gradating to light brown on back and top of head. Two black dots on snout. A curved black suborbital line almost encircling eye. Cheeks with few black spots and dumb-bell-shaped marks. Lower surface of head, breast and belly immaculate. Opercles, top of head and sides of body with conspicuous black markings, spot-like on the periphery of this area but laterally forming downward and backward-flowing lines, each of which runs below a transverse scale-row. Fins white with black margins, except the plain pectorals.

Described from the holotype of the subspecies, a specimen 56 mm. in standard length or 2 $\frac{3}{4}$ inches overall. Austr. Mus. regd. No. IB.3996.

Loc.—Heron Island, Capricorn Group, Queensland; Mr. R. Slack-Smith. Collector's No. 26387.

The holotype of *P. mccullochi* from the New Hebrides differs from the Queensland subspecies in having slightly different proportions of eye, depth, etc., more numerous scales, and less contrasted colour-pattern on the body, and fins dark and spotted instead of light and black-edged; its mouth reaches farther back below eye. Both differ from true *Pseudochromis (olivaceus)* from the Red Sea in having lower dorsal and anal fins and in formulae,

Family APOGONIDAE.

Genus APOGONICHTHYS Bleeker, 1854.

The true *Apogonichthys* (Bleeker, Nat. Tijdschr. Ned. Ind. vi, 1854, p. 321. Haplotype, *A. perdix* Bleeker) was described as having "Dentes setacei maxillis, vomerini et palatini . . . linea laterali antice tubulis simplicibus notata postice inconspicua," P. 2/11, and coloration different from that of the new species described below, in which I cannot see any vomerine or palatine teeth, and which has a completely tubed lateral line and 15 pectoral rays.

APOGONICHTHYS AHIMSA, sp. nov.

D. vii/i, 9; A. ii, 8; P. 15; V. i, 5; C. 14 main rays. L. Lat. 20. Tr. 1/1/6. One predorsal scale.

Head (11 mm.) 2.3, depth (10) 2.6 in standard length (26). Other dimensions of holotype: eye = interorbital, 4 mm.; maxillary = width of body = depth of caudal peduncle, 5; length of caudal peduncle, 6; head depth at occiput, 9; third dorsal spine = longest pectoral ray, 7; second anal spine, 4; snout, 3.2; predorsal length, 12; snout to anal origin, 17.

Anterior nostril with short tube; posterior open, near eye. Orbit, suborbital and preopercular margins entire or posterior margin of preoperculum weakly serrate. Operculum with two flat spines. Lower lip included. Tongue archly rounded. Maxillary excavated, reaching below posterior part of pupil (not of orbit). Bands of fine villiform teeth on jaws; none on vomer or palatines. Gill-membranes separated by a narrow isthmus. Gillrakers less than pupil of eye, about 8 rudiments on lower part of first gill-arch.

Form high and compressed. Lateral line complete. No subcutaneous gland. Vent just before anal spines.

Third spine of first dorsal fin longest. Ventrals reaching anal. Caudal rounded.

Colour in formalin, greenish (perhaps artificially stained). Three to four subvertical cross-bands on body and often traces along middle of sides of two rudimentary cross-bars posterior to the thoracic ones. Caudal peduncle dark-smudged just before caudal base. Three dark streaks radiate from back of eye, the uppermost ending in a blackish spot over opercle. Pectorals and caudal plain and pale (caudal dark-spotted in one specimen); other fins infuscated, black in parts. Eye blue.

Described from the holotype (Austr. Mus. regd. No. IB.4036) and nine paratypes (IB.4037-39 and 4056), up to 1½ inches overall.

Loc.—Heron Island, Capricorn Group, Queensland; Mr. R. Slack-Smith, 1957. Field numbers H.29 and K.13.

The complete lateral line, included lower jaw, seven spines in first dorsal fin, small size and the coloration are distinctive characteristics.

Suggested vernacular name: gentle gobbleguts.

APOGONICHTHYS AHIMSA SANTOENSIS, subsp. nov.

As in typical *A. ahimsa*, but with four predorsal scales; interorbital (2.5 mm.) less than eye (4); maxillary, nearly 7 mm.; width of body (6) = depth of caudal peduncle, which is little less than its length (7.5). Longest pectoral ray, 9 mm.; ventral, 7; second anal spine, 4; standard length, 33.

Opercles entire. White villiform teeth on jaws and vomer. Third dorsal spine longest (5 mm.) and strongest. Caudal rounded.

Colour in alcohol, chocolate brown with a tendency to dark longitudinal banding. Spinous dorsal fin almost covered by a black blotch; pectoral mottled and dark basally.

Described from the holotype of the subspecies, a specimen 1½ inches overall, with a smaller paratype, Australian Museum regd. No. I.6543.

Loc.—Santo, New Hebrides; Professor W. A. Haswell.

Also 19 paratypes (No. I.13482), $\frac{7}{8}$ to $1\frac{1}{2}$ inches long, from the New Hebrides (Cummins & Stevens).

Family OSTORHINCHIDAE, nov.

Type-genus *Ostorhinchus* Lacepede, as interpreted below.

New family name to replace the Oplegnathidae, Hoplognathidae or Hoplegnathidae of authors.

Genus OSTORHINCHUS Lacepede, 1802.

Ostorhinchus Lacepede, Hist. Nat. Poiss. iv, 1802, p. 23.

Haplotype, *O. fleurieu* Lacepede.

Variants: *Osteorhynchus* Oken, Lehrbuch, 1816, p. 53; and Agassiz, Nomencl. Zool., 1846.

Ostorhynchus Bosc., Nouv. Dict. ed. 2, xxiv, 1818, p. 221; Agassiz, 1845, and *Ostorinchus* of authors.

Oplegnathus Richardson, Proc. Zool. Soc. Lond. viii, Aug. 1840, p. 27.

Haplotype, *O. conwaii* Richardson.

Emended to *Oplectognathus* by Troschel, Arch. Naturg. vii, 2, 1841, p. 136, and to *Hoplegnathus* by Richardson, Rept. 11th Meet. Brit. Assn. Adv. Sci. 1841 (1842), p. 71; and altered to *Hoplognathus* by Gunther, Zool. Rec. 1865, p. 184 (not *Hoplognathus* Burmeister, 1844 or Chaudhoir, 1848 nor *Oplagnathus* Macleay, 1819, in Coleoptera).

Scaradon Temminck & Schlegel, Fauna Japonica, Poiss. 1844, p. 89.

Logotype, *S. fasciatus* T. & S. Spelt *Scarodon* on pp. 91 & 318.

Ichthyorhamphos Castelnau, Mem. Poiss. Afr. Austr., 1861, p. 35.

Haplotype, *I. pappei* Castelnau.

Scarostoma Kner, Sitzungsber. Akad. Wiss. Wien. lvi, 1, 1867, p. 715.

Haplotype, *S. insigne* Kner.

Karodon Bleeker (? Nat. Tijdschr. Dierk. iv, 1873, p. 134—not seen) and/or Vehr. Akad. Amsterdam xviii, 1879, p. 8. Haplotype *Hoplegnathus punctatus* Richardson.

Ostorhinchus was regarded as a subgenus of *Apogon* by Jordan and Evermann in 1896 and in some of Jordan's papers, but Lacepede's description obviously refers to a Knife-jaw. The skull of "*Hoplegnathus*" has been figured by Gregory (Trans. Amer. Philos. Soc. xxiii, 1933, p. 250, fig.). The development of the soldered teeth has been described by Hiyama (Zool. Mag., Tokyo, xlvi, 1934, p. 304 and figs.). The young "Tholichthys" stage of a Chinese fish has been figured by Herre (Lingnan Sci. Journ. xvii, 3, 1938, p. 431, fig. 2). A recent review of the species was supplied by Fowler (Bull. U.S. Nat. Mus. 100, xii, 1933, p. 217).

OSTORHINCHUS CONWAII (Richardson).

? *Ostorhinchus fleurieu* Lacepede, Hist. Nat. Poiss. iv, 1802, p. 23. "Le Grand Océan équinoxial" (Bougainville's voyage).

Oplegnathus conwaii Richardson, Proc. Zool. Soc. Lond. viii, Aug. 1840, p. 27. Port Arthur, Tasmania (locality given on p. 25).

Hoplegnathus conwayii Richardson, Rept. 11th meet. Brit. Assn. Adv. Sci. 1841 (1842), p. 71; Trans. Zool Soc. Lond. iii, 1844, p. 144, pl. vii, fig. 1. *Id.* Gunther, Cat. Fish. Brit. Mus. iii, 1861, p. 357. And of Australian lists. *Id.* Waite, Rec. Austr. Mus. iii, 1900, p. 214.

? *Ichthyorhamphos pappei* Castelnau, Mem. Poiss. Afr. Austr. 1861, p. 35. Kalk Bay, South Africa. African records of *conwaii* are probably referable to *pappei*.

Hoplognathus woodwardi Woodward, W. Austr. Mus. Guide, 1900, p. 78. *Nom. nud.*

- Hoplegnathus woodwardi* Waite, Rec. Austr. Mus. iii, 1900, p. 212, pl. xxxvii, Swan River, Western Australia.
- Oplegnathus woodwardi*, Waite and McCulloch, Trans. Roy. Soc. S. Austr. xxxix, 1915, p. 464 (Great Australian Bight records).
Id. McCulloch, Biol. Res. Endeav. iv, 4, 1916, p. 187, pl. liv.
Id. Waite, Rec. S. Austr. Mus. ii, 1921, p. 121, fig. 183; Fish. S. Austr., 1923, p. 143 and fig.
Id. Glauert, Journ. Roy. Soc. W. Austr. vii, 1921, p. 46.
Id. Whitley, Austr. Mus. Mag. iv, 1930, p. 97, fig. (teeth).
- Hoplegnathus australis* Regan, Ann. Durban Mus. i, 3, 1916, p. 169. Tasmania.
- Oplegnathus conwayi*, Sherborn, Index Anim., 1925, p. 1507. Emend.

The Red Funnel Trawlers obtained this species (agreeing best with the *woodwardi* form) from 78 to 80 fathoms off Tathra, and Mr. A. P. Grassick presented the 18-inch specimen to the Australian Museum, Regd. No. IB.3965. New record for New South Wales. The species has been found in Western and South Australia, Tasmania, Bass Strait and south-eastern Australia. Related forms are recorded from Norfolk Island, South Africa, South America and Japan. The operculum varies in shape and degree of serration. Regan's *australis* has unusually deep body and long ventrals.

Family GOBIIDAE.

Genus PRIOLEPIS Cuv. & Val., 1837.

- Priolepis* Cuvier & Valenciennes, Hist. Nat. Poiss. xii, March 1837, p. 67, ex Ehrenberg, Ms. Haplotype *P. mica* Cuv. & Val. *Id.* Hemprich & Ehrenberg, Symbolae physicae, 1899, pl. ix, fig. 6—*vide* Zool. Record 1899, p. 24. *Id.* Whitley, Austr. Zool. vi, 1930, p. 123.
- Zonogobius* Bleeker, Arch. Neerl. Sci. Nat. ix, 1874, p. 323. Orthotype, *Gobius semifasciatus* Kner.

PRIOLEPIS NECOPINUS, sp. nov.

D. vi/i, 9; A. i, 9; P. 17; V. i, 5; Sc. 23. Tr. 7 (to 5 on caudal peduncle). Predorsal area naked.

Head (6.5 mm.) nearly 3.7, depth (6) 4 in standard length (24). Eye, 3 mm.; interorbital, 1; depth of caudal peduncle 3.3; snout 1; maxillary 2.6, depth of head, 6, width of head, 4.5.

Head scarcely compressed, with roundly convex dorsal profile and flatter ventral profile. Eye large, high, anterior; interorbital narrow and deep. Nostrils close together. Snout short, bluntly rounded. Jaws reaching below front third of eye, lower slightly projecting; mouth oblique; no canines; fine teeth apparently in two rows. Tongue truncately rounded, not notched.

Raised mucous-ridges on snout before eyes. Rows of ciliate papillae on sides of head below and behind eye, around preoperculum, and around corner of mouth to under surface of mandible. Anterior part of opercle with a vertical series of papillae and a shorter horizontal one.

Gill-openings large, continued well forward to below middle of eye. Isthmus narrow.

Body fairly robust, compressed, greatest depth just behind head. It is mostly covered by large ctenoid scales but the predorsal area is naked. However, the breast and pectoral base are scaly. Length of caudal peduncle about equals that of head. Vent large.

Two dorsal fins joined by membrane. Dorsal spines slender, the third or fourth longest and filamentous; soft dorsal rays increasing in height posteriorly. Anal similar to second dorsal. Pectoral pointed, subequal to head, reaching vent, its rays not silk-like or modified. Ventral fins separated, not suckerlike or connected by membrane, their inner rays much longer than the outer ones. Caudal rounded.

Colour, after preservation, pale yellow with conspicuous, open, brown

reticulations anteriorly, fading ventrally. The brown pattern extends to enclose light round spaces on the dorsal, anal and caudal fins. Ventrals and pectorals plain, pale.

Described from the holotype (Austr. Mus. regd. No. IB.3991), a specimen 24 mm. in standard length or about 1.1 inches overall, and twenty paratypes (IB. 3992-3993) two of them in U.S. National Museum, Washington.

Loc.—Heron Island, Capricorn Group, Queensland; 24 Aug. 1957. Collected and presented by Mr. R. Slack-Smith. Collector's field No. 4.

My largest specimen is 32 mm. (1¼ inches) overall. Laceface Goby is suggested as a vernacular name.

Latin *necopinus*, unexpected.

This goby is distinguished by its reticulated anterior coloration, separated ventral fins, naked predorsal area, scaly pectoral base, etc.

Related to *Quisquilius eugenius* Jordan and Evermann, Bull. U.S. Fish. Comm. 1902, xxii, April 11, 1903, p. 203, from Oahu, but differs in having scaleless predorsal area. From *Priolepis*, sensu stricto, it differs in having the head less compressed and not banded, and in coloration.

Genus CTENOGOBIUS Gill, 1858, s.l.

AURIGOBIUS, subg. nov.

Orthotype, *C. (A.) auriga*, sp. nov.

An Australian goby which differs from all others in having the first dorsal spine produced, much longer than the head. Other characteristics are noted below, particularly noteworthy being the cycloid scales which leave the nape and predorsal area naked.

CTENOGOBIUS (AURIGOBIUS) AURIGA, sp. nov.

D. vi/i, 9; A. i, 9; P. c. 16; V. i, 5. Sc. 24. Tr. 6. Predorsal sc. 0.

Head (9 mm.) 3.2, depth (4) 7.2 in standard length (29). Eye (3) longer than snout (2.3). Width of head (6) greater than its depth and than postorbital (4.5). Length of caudal (8) less than head.

Head rather swollen; no transverse groove behind eyes. Lips exposed. Lower jaw the longer. Mouth reaching below pupil. Tip of snout before lower margin of eye. Eye partly behind front third of head. Bands of villiform teeth in jaws, a row of enlarged hook-like teeth externally. No enlarged mandibular canines. Tongue truncate. Mucus tubes form a V, diverging over snout, and run from eye over opercle and around preoperculum. Two short longitudinal rows of genipores on cheek; minute papillae elsewhere. Cheeks and opercles naked, unarmed; no barbels or fleshy flaps. Front nostril near upper lip, posterior near eye. Interorbital very narrow, orbits almost contiguous. Gill-openings extending to below preoperculum separated by fairly wide isthmus.

Body fairly elongate, slightly compressed with large cycloid scales which extend over the breast. Predorsal area, nape and pectoral base naked.

First dorsal spine produced, longer than head, others normal. Fins all reaching well back, higher than body posteriorly, rather pointed. Pectorals reach below second dorsal; seventh ray longest; upper rays not silky. Ventrals united, with frenum, their fifth ray longest, reaching beyond anal papilla. Caudal broadly lanceolate.

Colour: Greenish in preservative. A few sprinklings of black chromatophores along sides and on fins. Black blotch on membrane between first two dorsal spines. Anal fin infuscated. Ventrals and caudal with narrow black margins.

Described from the holotype, 1¼ inches long, and two smaller paratypes Austr. Mus. regd. Nos. IB.4001-4003.

Loc.—Heron Island, Capricorn Group, Queensland. Mr. R. Slack-Smith's field No. H.79.

Perhaps nearest *Ctenogobius cylindricus* Bleeker (Arch. Neerl. Sci. Nat. x, 1875, p. 129) from Singapore, but evidently differing in having no predorsal scales and in its elongate first dorsal spine.

Genus GLOSSOGOBIUS Gill, 1862.

It is with some doubt that I refer the following species to this genus, as it has a rounded tongue, lanceolate caudal fin and hooked canines in the lower jaw, which is longer than the upper.

GLOSSOGOBIUS? BULMERI, sp. nov.

D. vi/i, 8; A. i, 7; P. 17; V. i, 5; C. 13 main rays. Sc. in about 29 transverse rows between head and base of caudal. Predors. and Tr. sc. about 13.

Head (16 mm.) 3.2, depth (10) 5.2 in standard length (52). Eye (4) 4, caudal fin (16) 1, postorbital (7) 2.3; maxilla (5) 3 in head. Predorsal length 19 mm.

Head broader than deep, tapering, rather depressed. No process on pupil of eye. Interorbital narrow, concave. Operculum with small flap. Gill-opening extending well forward below, nearly to below eye. Isthmus narrow. Upper lip thick; lower jaw projecting; mouth oblique, not quite reaching below eye. Six enlarged hooked canines in lower jaw anteriorly. Bands of coarse villiform teeth (enlarged anteriorly in upper jaw) elsewhere on jaws; none on palate. Tongue rounded, not notched, adnate for much of its length. Genipores inconspicuous. Mucous canals around eye, over opercles and around preoperculum. Head naked. Predorsal scales nearly reach to posterior level of eyes; foremost scale on nape not enlarged.

No fleshy flaps on shoulder-girdle. Body with large ctenoid scales becoming smaller anteriorly and with weaker ctenii. Breast and pectoral bases scaly. A small round anal papilla.

Dorsal fins separate; soft dorsal and anal pointed, leaving a long caudal peduncle free. Seventh and eighth pectoral rays longest shorter than head, reaching about 13th scale. No silky rays. Ventrals united, pointed, not reaching vent; with frenum. Caudal pointed, as long as head.

Colour in alcohol brown with darker mottlings or edges to the scales. Fins mostly infuscated but distal half of first dorsal is light and there is a black blotch on the last two membranes of the spinous dorsal fin. Inner ventral rays blackish; outer cream.

Described and figured from the unique holotype of the species, a specimen 52 mm. in standard length or $2\frac{1}{2}$ ins. overall. Australian Museum registered No. IB.3564.

Loc.—Kwan Stream, flowing into the lower Lanim River, a tributary of the Lai River, Sepik watershed, New Guinea; altitude 3,000 to 3,500 feet; 28 October 1955. Collected and presented by Mr. R. N. H. Bulmer, of the National University, Canberra, after whom I have much pleasure in naming the species. Taken in association with *Rhombosoma affinis* (Weber) and *Mogurnda aurifodinae* Whitley.

The rounded tongue and lanceolate caudal fin are distinctive apart from the other combination of characters described.

GLOSSOGOBIUS ASARO, sp. nov.

D. vi/i, 9; A. i, 8; P. 17; V. i, 5; C. 15 main rays. Sc. 31 from opercle to hypural joint. Tr. 13 at first dorsal, 8 at second and $5\frac{1}{2}$ at caudal peduncle. About 11 predorsal scales, ceasing well behind eyes.

Head (20 mm.) 3.4, depth (13) 5.2 in standard length (69). Eye (4) 5 in head. Interorbital, 3 mm.; snout 7; postorbital 11; predorsal length, 25; caudal fin, 20 mm.

Head broader than deep, bluntly rounded, the upper lip terminal and the mouth undershot. No process on pupil of eye. Interorbital rather wide and flat. Gill-opening extending forward to below preoperculum. Gillmembranes attached to broad isthmus. Mouth reaching below anterior margin of eye.

Lips thick. Teeth on jaws in several rows, outer and inner of which are enlarged, spaced; none on palate. Tongue truncate, mostly adnate.

Rows of minute genipores around and behind eye and in five horizontal rows on cheeks; others along supraopercular canal; a vertical and a curved row down operculum and other papillae around chin. Nostrils about the same distance from the eye and the lip as they are from one another. Head naked. Predorsal scales barely reach level of preoperculum. No transverse groove on back of head. No barbels. Six short slender gill-rakers on lower part of first gill-arch.

No fleshy flaps on shoulder girdle. Body with large, adherent, ctenoid scales, becoming cycloid predorsally. Much of breast, belly and pectoral bases naked. A flattened, fleshy anal papilla.

Dorsal fins separate; soft dorsal, anal, pectoral and caudal rather pointed. No silky pectoral rays. Ventrals short and rounded, united, with frenum, not nearly reaching vent.

Colour in alcohol rich brown with darker edges to scales. Fins densely infuscated. Dark spots on caudal membranes.

Grows to $3\frac{1}{2}$ inches in length. Feeds on gastropod shells.

Described from the holotype, a specimen 69 mm. in standard length or $3\frac{1}{2}$ inches overall, and a series of 36 smaller paratypes.

Australian Museum regd. No. IB.3748.

Loc.—Living under stones and algal tufts in a swift, shallow freshwater stream near Wallace's property, Asaro River, five miles south of Goroka, New Guinea; alt. about 6,000 ft.; 27 October 1956. Collected by hand by Dr. and Mrs. D. F. McMichael and native helpers. The Asaro River flows towards the headwaters of the Purari river-system which reaches the sea to the south of New Guinea.

Distinguished from its congeners by its snub nose, undershot mouth, small round ventral fins, caudal fin equal to head, etc.

Family SYNANCEJIDAE.

SYNANCEJA TRACHYNIS (Richardson, 1842).

The Stonefish can now be reliably recorded from New South Wales. A specimen of this dangerous fish, 29 cm. long and weighing 4 lb., was trawled off Ballina in 7 or 8 fathoms and presented to the Australian Museum in June 1958 by Mr. H. W. Lane, Fisheries Inspector. Registered No. IB.3966.

Family SCORPAENIDAE.

Genus HYPODYTES Gistel, 1848.

HYPODYTES CARINATUS MACROLEPIDOTUS (Ogilby, 1910).

Apistus carinatus (Bloch & Schneider) McCulloch, Biol. Res. Endeavour iii, 1915, p. 160, pl. xxxi.

Hypodytes carinatus McCulloch, Austr. Mus. Mem. v, 1929, p. 389 (q.v. for refs.).

One of these Pilgrim Fish, trawled off Ballina in 7 or 8 fathoms by Fisheries Inspector H. W. Lane in April 1958, constitutes a new record for New South Wales. Austr. Mus. regd. No. IB.3971.

Family CLINIDAE.

Genus CRISTICEPS Cuvier & Valenciennes, 1836.

CRISTICEPS PATAECOIDES, sp. nov.

D. iii, xxviii, 6; A. ii 24; P. 11; V. 3; C. 10.

Head (27 mm.) nearly 4 and depth at anal origin which equals height of first dorsal spine (26) 4 in standard length (105). Eye (5) 5.4, height of soft dorsal lobe which is equal to that of anal lobe (15) 1.8 in head.

A simple tentacle over eye, less than eye-diameter in height. Tentacle at anterior nostril with 3 or 4 ray-like branches. Posterior nostril on each side

just before dorsal origin. Maxilla reaching below posterior part of eye. Narrow bands of hooked teeth in jaws and in two patches on vomer. Tongue rounded.

First dorsal fin originating before eye, elevated and with ample membranes; united to lower third of first spine of second dorsal fin by membrane. The rays are without pronounced interspace. Soft dorsal lobe almost reaching over hypural joint. Caudal peduncle slender and fairly elongate, the membrane from the posterior dorsal ray reaching halfway along its length; anal fin ends farther forward. Membranes of fins slightly roughened.

First eighteen or so lateral line tubes close together anteriorly, separating more as they descend and continue along sides to caudal peduncle, about 50 altogether (49/52). No scales.

Pale to yellowish brown on head and body; fins darker and with a dull purplish tinge; dorsal and anal with slightly lighter margins. Tentacles on head and an oblique bar below eye dull purplish-brown. A few very small purple flecks along upper sides of back. Fins without transparent patches.

Described from the unique holotype, a specimen 105 mm. in standard length or a little over 5¼ inches overall. Austr. Mus. regd. No. IB.4014.

Loc.—About five miles off the mouth of the Clarence River, northern New South Wales, taken in prawn-trawl in about 200 feet of water by Mr. Roy Davis and presented to the Australian Museum by Mr. W. R. Weiley, M.L.A. for Clarence, Parliament House, Sydney, who frequently donates fishes of interest from northern New South Wales.

The new species is closest to *C. aurantiacus* from New South Wales and Lord Howe Island (see McCulloch, Rec. Austr. Mus. vii, 1908, p. 38, pl. x, fig. 1) but differs in having the two spinous dorsal fins connected by membrane, darker fins, anterior dorsal fin lower, and in its comparatively slightly longer soft dorsal and anal lobes.

Family BLENNIIDAE.

Genus GRAVICEPS Fowler, 1903.

The following new species differs from the genotype (*Petrosirtes elegans* Steindachner) and its congeners in fin-counts and coloration. The small head, elongate body and high second dorsal in comparison with the first dorsal fin and filamentous caudal rays help to discern it.

GRAVICEPS ANGELUS, sp. nov.

D. 13, 21 = 34; A. ii, 24; P. 14; V. 2; C. 15.

Head (10 mm.) 5, depth (7.5) 6.6 in standard length (50) or 6.2 and 8.2, respectively, in total length (62). Eye (3) equal to snout and greater than interorbital (2.3).

Slight skin-fold along top of head. Profile strongly convex. Some pores on head but no tentacles. Mouth infero-lateral, curved, not reaching below eye, with about 23 incisor teeth across each jaw and with lateral canines. No barbels, but a small lip-fold each side of lower jaw. Gill-opening a short curved oblique slit above pectoral base.

Body compressed, elongate. Lateral line almost obsolete.

Dorsal and anal fins free of caudal. First dorsal fin arising above front of gill-opening, well behind eye, its spines notably lower than the rays, the longest of which (7 mm.) are equal to postorbital. Anal fin about 5 mm. high, thus higher than anterior dorsal spines. First anal spine minute, second ray-like. Pectoral length (9 mm.) less than that of head; ventrals nearly 9 mm. long, neither extends to vent. Caudal with tips of rays filamentous, beyond membranes.

Colour in formalin, light brown with grey markings as blotches along middle sides of body. Brown spots and bars on lower parts of head; brown band from eye to chin. A dark blue blotch behind eye. First dorsal fairly uniform brown, second pale grey with about seven layers of curved brown lines crossing rays. Anal fin pale brown, darker distally, with tips of anterior rays white. Two grey spots, one above the other, on caudal peduncle, arising from each

of which is an indistinct brown stripe passing backwards over caudal fin. Viscera and eyes bluish.

Described from the unique holotype, a specimen 50 mm. in standard length or nearly 2½ inches overall. Austr. Mus. regd. No. IB.3995.

Loc.—Heron Island, Capricorn Group, Queensland. Mr. R. Slack-Smith.

Near *Petroscirtes kranjiensis* Herre (Bull. Raffles Mus. xvi, 1940, p. 25, fig., Singapore), but differs in proportions, disparity in height between two dorsal fins, and the mouth does not reach below middle of eye.

Family ANTENNARIIDAE.

Genus ANTENNARIUS Daudin, 1816.

ANTENNARIUS DOREHENSIS Bleeker.

Antennarius dorehensis Bleeker, Act. Soc. Sci. Ind. Neerl. vi, 1859, p. 21 and Atlas Ichth. v, 1865, pp. 9 & 19, pl. cxcix, fig. 7. Doreh, New Guinea.

Id. Herre, Copeia 1945, 3, p. 149. *Id.* Schultz, Proc. U.S. Nat. Mus. cvii, 1957, pp. 61 & 97, pl. xii, fig. B.

D. i, i, i, 12; A. 8; P. 8; V. 5.

Gill-opening at pectoral elbow. Skin soft, not warty, almost covered with tiny spines. Dorsal and anal fins well free of caudal. No smooth illicial trough, spinules being present between dorsal spines.

Illicium short, slender, shorter than second dorsal spine. Esca a simple, lanceolate flap. Third dorsal spine movable. Second dorsal spine about one-sixth soft dorsal base. Last few dorsal and anal rays branched. Eight simple pectoral rays and five ventral, the last divided. General features as given by Bleeker.

Colour dark grey, later changing to brown in alcohol, with lichen-like pale grey patches and a number of white spots along lateral line and elsewhere on body. Dorsal and anal with whitish at margins. Bases of caudal rays cream. A black spot on soft dorsal and another on back. No large ocelli, or marked stripes or bands.

Described from a specimen 36 mm. in standard length or about 1½ inches overall. Australian Museum regd. No. IB.1537.

Loc.—Bat Island, Purdy Archipelago, New Guinea (Lat. 2° 50' S. x Long. 146° E.); collected by Flight-Lieutenant Duncan C. Swan in 1945.

Other species seen or collected at the same place were *Mapolamia spallanzani*, *Siderea picta*, a belonid, *Kutaflammeo sammara* var. *laevis*, *Holocenthrus violaceus*, *Myripristis murdjan*, *Oedalechilus cirrhostomus*, *Ellochelon vaigiensis*, *Epinephelus corallicola*, *E. forsythi*, *E. caeruleopunctatus*, *Cephalopholis argus*, *Terapon servus*, *Caranx* sp., *Caesiomorus baillonii*, *Chorinemus toloparah*, *Trachinotus blochi*, *Elagatis bipinnulatus*, *Lutjanus semicinctus*, *L. lineatus*, *L. fulviflamma*, *L. Coatesi*?, *Gerres acinaces*, *Mulloidichthys samoensis*, *Lethrinus papuensis*, *Opisthistius cinerascens*, *Platax orbicularis*, *Chaetodon trifasciatus*, *Teuthis triostegus*, *Premnas biaculeatus*, *Novaculichthys taeniourus*, *Carapus* sp., *Leptecheneis neucrates*, the above *Antennarius dorehensis*, *Balistapus undulatus*, *Balistoides flavimarginatus*, *Hemibalistes chrysopterus*, *Rhinecanthus aculeatus*, *R. echarpe*.

ANTENNARIUS PHYMATODES Bleeker.

Antennarius phymatodes Bleeker, Act. Soc. Sci. Indo-Neerl. ii, 1857, p. 69. Amboina. *Id.* Bleeker, Atlas Ichth. v, 1865, pp. 8 & 11, pls. cxcvii, fig. 1 & cxcix, fig. 5. *Id.* Schultz, Proc. U.S. Nat. Mus. cvii, 1957, pp. 54, 59, & 90, pl. xi, fig. A.

One specimen, 135 mm. long, from Heron Island, Capricorn Group, Queensland; presented by Miss Barbara Dew. Austr. Mus. regd. No. IB.3906.

New record for Australia.

Family BALISTIDAE.

Genus RHINECANTHUS Swainson, 1839.

RHINECANTHUS ACULEATUS (Linnaeus).

Balistes aculeatus Linnaeus, Syst. Nat., ed. 10, 1758, p. 328. India.

A young specimen, 1½ inches long, was collected at Long Reef near Sydney on March 1, 1958, by Mr. Harold Cogger.

New record for New South Wales.

RHINECANTHUS ECHARPE (Anon.).

Balistes echarpe Anon., Allgem. Lit. Zeit. iii, 287, Sept. 24, 1798, p. 682. Based on "Le Baliste écharpe" (vernacular name only) Lacépède, Hist. Nat. Poiss. i, 1798, p. 352, pl. xvi, fig. 1. "Habitat in Mari Indico." *Balistes rectangulus* Bloch & Schneider, 1801, was also based on this, and the species has often been called *Balistapus rectangulus* by authors.*Balistes garnoti* Castelnau, Proc. Zool. Acclim. Soc. Vict. ii, May 10, 1873, p. 107. Knob Island, Queensland. New synonym.*Balistes garnoti* is evidently the young of this species. The Australian Museum has specimens of *Rhinecanthus echarpe* from Oahu, Ontong Java (Lord Howe's Group, Melanesia), Bat Island (Purdy Archipelago, New Guinea), Ugi (Solomons), St. Crispin and Maori Reefs (Great Barrier Reef, Queensland). The species may now be added to the New South Wales list, as Mr. Harold Cogger collected one young "*garnoti*" at Long Reef near Sydney on 2 March 1958. He found that the above two species of *Rhinecanthus* inhabited holes in rocks in about 18 inches of water and that they made underwater noises.

Family TETRAODONTIDAE.

Subfamily OVOIDINAE, nov.

Toadoes with a single nostril on each side, often appearing as two tentacles, and with a single lateral line reaching tail on each side. This subfamily is represented in Australia by *Ovoides* spp., *Cyprichthys*, *Boesemanichthys*, and possibly "*Tetrodon*" *staigeri*; other examples are given in the Arothroninae of Fraser-Brunner (Ann. Mag. Nat. Hist. (11) x, Jan. 1943, p. 15).

Genus OVOIDES Anon., 1798.

OVOIDES AEROSTATICUS OTTERI Whitley,

Ovoides aerostaticus otteri Whitley, Great Barrier Reef Exped. Sci. Rept. iv, 9, 1932, p. 311, pl. iii, fig. 2. Batt Reef, Queensland.One from Ballina, New South Wales, Feb. 1958, caught by Dr. A. A. Racek, who states that it swam very fast. New record for New South Wales for this subspecies. Abe (Bull. Biogeogr. Soc. Japan xiv, 1949, pp. 128-129) regards it as a synonym of *Tetraodon stellatus*, but the dorsal fin of *otteri* is unspotted.

Family CANTHIGASTERIDAE.

Genus CANTHIGASTER Swainson, 1839.

CANTHIGASTER JANTHINOPTERUS (Bleeker).

Tropidichthys janthinopterus Bleeker, Nat. Tijd. Ned. Ind. viii, 1855, p. 429. Amboina. *Id.* Weber, Siboga Exped., Fische, 1913, p. 587.*Anosmius janthinopterus* Bleeker, Act. Soc. Sci. Indo-Neerl. vi, 1859, p. 202.*Psilonotus janthinopterus* Bleeker, Act. Soc. Indo-Neerl. viii, 1860, p. 13; Ned. Tijd. Dierk. ii, 1865, p. 272; and Atlas Ichth. v, 1865, pl. ccxiii, fig. 2.*Canthogaster janthinopterus* Bleeker, Atlas Ichth. v, 1865, pp. 79 & 82; Ned. Tijd. Dierk. iii, 1866, p. 39.

Canthogaster reticulatus Bleeker, Atlas Ichth. v, 1865, p. 82. "Un titre plus juste" for *janthinopterus*.

Tetrodon janthinopterus Gunther, Cat. Fish. Brit. Mus. viii, 1870, p. 302.

Canthigaster janthinopterus Herre, Fish. Herre Exped. 1934, p. 9.

Id. Fraser-Brunner, Ann. Mag. Nat. Hist. (11) x, 1943, p. 9.

Id. Smith, Ann. Mag. Nat. Hist. (13) i, 1958, p. 60, pl. 1, fig. a.

D. 9; A. 9; P. 18; C. 9.

Colour in formalin, greyish brown fading to almost white on fins and along the plain chin and median part of belly. Sides of head and body with large dirty-white spots, larger than their interspaces, the latter forming an open brown network. A dozen short, thick brown bars radiate from the blue eye. Base of dorsal fin dark brown. Caudal fin plain.

Length $2\frac{1}{2}$ inches.

Loc.—Heron Id., Queensland. Mr. R. Slack-Smith's No. 26371.

Austr. Mus. regd. No. IB.3998.

New record for Australia. The Australian Museum also has a small specimen from Santo, New Hebrides.

CANTHIGASTER BREDERI, sp. nov.

New name for *Canthigaster punctatissimus reticulatus* Breder (Bull. Bingham Oceanogr. Coll. ii, 3, 1936, p. 50 & figs. Lower California), preoccupied by *Canthigaster reticulatus* Bleeker (Atlas Ichth. v, 1865, p. 82).

Addendum to Family APOGONIDAE (page 314, above).

Genus SIPHAMIA Weber, 1909.

SIPHAMIA ZARIBAE, sp. nov.

A fuller account with a figure has been prepared for later publication, and some Queensland colleagues intend to give some account of the interesting habits of this fish, for which I provide the above name. It is near *Siphamia cuprea* Lachner (Bull. U.S. Nat. Mus. ccii, 1953, pp. 415, 418, 423 & 424, fig. 72) from the Philippines but differs in having the second dorsal spine longest of the six in that fin and in having a much longer and slenderer caudal peduncle. The holotype is Austr. Mus. regd. No. IB.4129, and there is a larger paratype (IB.4132) measuring $1\frac{3}{8}$ inches overall. Both from spines of a sea-urchin, Heron Island, Queensland; coll. Mr. K. Gillett, 1958.

D. vi/i, 9; A. ii, 8; P. 15. Sc. c. 21. Tr. about 2/6. Head and depth 40% of standard length; predorsal length 45% of same (20 mm.). Depth of caudal peduncle, 2.3 mm. Preoperculum entire.

Colour in formalin, black with the fins white but with the proximal parts of fin-rays of unpaired fins pigmented black.